

Substance Group: **Group 17**

Summary prepared by: **Petroleum Additives Panel**
 Health & Environmental Research Task Group

1) Melting Point

<u>Test Substance</u>	
CAS #	CAS# 68411-58-5
Chemical Name	2,5-Furandione, 3-(dodecenyl)dihydro-, reaction products with propylene oxide
<u>Method</u>	
Method/Guideline followed	MPBPWIN Version 1.31 (EPIWIN)
Test Type	Boiling Point
GLP (Y/N)	Not Applicable
Year Determined	2001
Decomposition	Not Determined
<u>Results</u>	477.91°C (Adapted Stein and Brown Method)
<u>Data Quality</u>	Reliable with restriction (Klimisch Code). Restriction due to the fact that this value is based on modeling rather than experimental data.
<u>References</u>	Unpublished confidential business information
<u>Other</u>	Updated: 10/10/2001

2) Vapor Pressure

<u>Test Substance</u>	
CAS #	CAS# 68411-58-5
Chemical Name	2,5-Furandione, 3-(dodecenyl)dihydro-, reaction products with propylene oxide
<u>Method</u>	
Method/Guideline followed	MPBPWIN Version 1.31 (EPIWIN)
Test Type	Vapor Pressure
GLP (Y/N)	Not Applicable
Year Determined	2001
Decomposition	Not Determined
<u>Results</u>	5.48E-011 mm Hg @ 25 °C (Modified Grain Method)
<u>Data Quality</u>	Reliable with restriction (Klimisch Code). Restriction due to the fact that this value is based on modeling rather than experimental data.
<u>References</u>	Unpublished confidential business information
<u>Other</u>	Updated: 10/10/2001

3) Partition Coefficient

<u>Test Substance</u>	
CAS #	CAS# 68411-58-5
Chemical Name	2,5-Furandione, 3-(dodecenyl)dihydro-, reaction products with propylene oxide
<u>Method</u>	
Method/Guideline followed	KOWWIN Version 1.65 (EPIWIN)
Test Type	Partition Coefficient
GLP (Y/N)	Not Applicable
Year Determined	2001
<u>Results</u>	Log Kow = 5.36
<u>Data Quality</u>	Reliable with restriction (Klimisch Code). Restriction due to the fact that this value is based on modeling rather than experimental data.
<u>References</u>	Unpublished confidential business information
<u>Other</u>	Updated: 10/10/2001

4) Water Solubility

<u>Test Substance</u>	
CAS #	CAS# 68411-58-5
Chemical Name	2,5-Furandione, 3-(dodecenyl)dihydro-, reaction products with propylene oxide
<u>Method</u>	
Method/Guideline followed	WSKOW Version 1.36 (EPIWIN)
Test Type	Water Solubility
GLP (Y/N)	Not Applicable
Year Determined	2001
<u>Results</u>	0.035 mg/L @ 25 °C
<u>Data Quality</u>	Reliable with restriction (Klimisch Code). Restriction due to the fact that this value is based on modeling rather than experimental data.
<u>References</u>	Unpublished confidential business information
<u>Other</u>	Updated: 10/10/2001

Robust Summary - Biodegradation

<u>Test Substance</u>	
CAS #	68411-58-5
Chemical Name	2,5-Furandione, 3-(dodecenyl)dihydro-, reaction products with propylene oxide
Remarks	This substance is referred to as 2,5-furandione, 3-(dodecenyl)dihydro-, reaction products with propylene oxide in the HERTG's Test Plan for 2,5-Furandione, 3-(dodecenyl)dihydro-, Reaction Products with Propylene Oxide. For more information on the chemical, see Section 2.0 "General Substance Information" of 2,5-Furandione, 3-(dodecenyl)dihydro-, Reaction Products with Propylene Oxide in HERTG's Test Plan for 2,5-Furandione, 3-(dodecenyl)dihydro-, Reaction Products with Propylene Oxide.
<u>Method</u>	
Method/Guideline followed	OECD 301F
Test Type (aerobic/anaerobic)	Aerobic
GLP (Y/N)	Y
Year (Study Performed)	1999
Contact time (units)	28 days.
Inoculum	Activated sludge from domestic wastewater treatment plant.
Remarks for test conditions	<p><u>Inoculum</u>: The return activated sludge from a domestic wastewater treatment plant was used as the inoculum. The sludge was aerated and stirred for 24 hours in a flask, homogenized in a Waring blender at low/medium speed for 2 minutes, and allowed to stand for ½ to 1 hour. The supernatant was used for inoculum pre-adaptation. The sludge supernatant was supplemented with vitamin free casamino acids and yeast extracts and pre-adapted to the test material for 14 days during which the test substance was added incrementally at concentrations equivalent to 4, 8, and 8 mg carbon/L on days 0, 7, and 12, respectively. On day 14, a composite mixture was prepared by mixing equal amount of all homogenized cultures. The microbial level in the test mixture was 1000 cells/mL.</p> <p><u>Concentration of test chemical</u>: Test substance concentration was approximately 100 mg per liter of test medium. No organic solvents were used to facilitate the dispersion of the test material. The test substance was weighed onto a Teflon coupon and introduced into the medium.</p> <p><u>Temp of incubation</u>: 23 ± 1°C</p> <p><u>Dosing procedure</u>: A measured volume of the inoculated mineral medium containing approximately 100 mg/L test substance was continuously stirred in a closed system for 28 days.</p> <p><u>Sampling frequency</u>: The oxygen uptake was monitored continuously</p>

	<p>and recorded every 4 hours throughout the test.</p> <p><u>Controls</u>: Yes (blank and positive controls per guideline); abiotic and toxicity checks were not included. Sodium benzoate was used as the positive control.</p> <p><u>Analytical method</u>: Oxygen uptake was measured using a BI-1000 electrolytic respirometer system. The system contained 2 independently controlled eight-channel reactor modules, 2 temperature controlled units, and a PC for data acquisition.</p> <p><u>Method of calculating measured concentrations</u>: N/A</p> <p><u>Other</u>: The inoculum was pre-adapted to the test substance for 14 days.</p>
<u>Results</u>	
Degradation % after time	9.1% after 28 days
Kinetic (for sample, positive and negative controls)	Reference (sodium benzoate) – >60% (3d) Test substance – 9.1% (28d)
Breakdown Products (Y/N) If yes describe breakdown products	N
Remarks	
<u>Conclusions</u>	9.1% in 28 days. The reference substance, sodium benzoate, reached a level of 95.3% in the same test period.
<u>Data Quality</u>	(1) Reliable without restriction
<u>References</u>	This robust summary was prepared from an unpublished study by an individual member company of the HERTG (the underlying study contains confidential business information).
<u>Other</u>	Date Prepared: 10-08-01

Robust Summary – Acute Toxicity

<u>Test Substance</u>	
CAS #	CAS# 68411-58-5
Chemical Name	2,5-Furandione, 3-(dodecenyl)dihydro-, reaction products with propylene oxide
Remarks	Test material purity not provided.
<u>Method</u>	
Method/Guideline followed	Study predates OECD Guideline 401
Test Type	Acute oral toxicity
GLP (Y/N)	No, Study predates development of GLP's.
Year (Study Performed)	1962
Species/Strain	Rats/Sprague Dawley
Sex	Not specified
No. of animals/dose	Low and high dose: 2/group Mid dose 10/group.
Vehicle	None
Route of administration	Oral (intragastric)
Dose level	2, 5 and 10 g/kg
Dose volume	Not Provided
Control group	None
Chemical analysis of dosing solution	No
Remarks field for test conditions	(Note: This study was conducted prior to the establishment of this test guideline. This report provides a summary of study findings. Individual data are not presented.) A single administration of the test material was given intragastrically to adult non-fasted rats at each dose level. The animals were observed for a two-week post-dosing period.
<u>Results</u>	LD50 >5 g/kg
Remarks	At the 2 g/kg dose level both animals survived. At 5 g/kg 1 of 10 animals died following test material administration. At the high dose (10 g/kg) 2 of 2 animals died following treatment.
<u>Conclusions</u>	The test article, when administered to non-fasted adult rats, had an acute oral LD50 of >5 g/kg.
<u>Data Quality</u>	Reliable with restriction (Klimisch Code). Restriction due to the fact that this is a summary report.
<u>References</u>	Unpublished confidential business information
<u>Other</u>	Updated: 8/30/01